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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/894,479	06/29/2001	Richard Henry Dee	00-113-TAP	5932

7590 06/03/2004

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EXAMINER	
CASTRO, ANGEL A	

ART UNIT	PAPER NUMBER
2653	8

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/894,479	DEE, RICHARD HENRY	
	Examiner	Art Unit	
	Angel A Castro	2653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) *2,3,10-16,18,19 and 26-32* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-9,17 and 20-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to Amendment A filed 3/12/04.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 4-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear from the claim what has to do with the invention (a magnetic tape reader) increasing the stiffness of a free layer of a magnetic disk head spin valve sensor.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 4-9, 17, 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koren (U.S. Pat. 5,424,883) in view of Tobise et al.

Regarding claims 1 and 17, Koren discloses an apparatus for reading data, comprising:

a magnetic tape media contact surface configured to contact a magnetic tape media 48; and

a reduced sensitivity sensor 46 (shielded MR sensor, column 1, lines 51-54), wherein the reduced sensitivity sensor senses an applied magnetic field from the magnetic tape media when the magnetic tape media passes by the reduced sensitivity sensor, and wherein the reduced sensitivity sensor has a sensitivity less than magnetic disk head sensors (column 1, lines 65-68). Koren does not specifically disclose that the sensor is a spin valve sensor.

Tobise discloses that the sensitivity is reduced from a sensitivity of the magnetic disk head spin valve sensor by increasing an effective anisotropy field of a free layer in a magnetic disk head spin valve sensor (see figure 3 where the sensitivity of the invention is reduced by increasing the effective anisotropy field of the free layer using a different composition of the permanent magnet).

Regarding claims 5 and 21, Tobise et al discloses that the effective anisotropy field of the reduced sensitivity spin valve sensor is increased by increasing a stiffness of a free layer of the reduced sensitivity spin valve sensor (see column 11, lines 1-21).

Regarding claims 6 and 22, Tobise et al discloses that the stiffness of the free layer is increased by using at least one permanent magnet stabilizing element 21 to impart a stiffening magnetic field to the free layer.

Regarding claims 7 and 23, Tobise et al discloses that the at least one permanent magnet stabilizing element is a cobalt-platinum-chromium magnet (column 5, line 26).

Regarding claims 8 and 24, Tobise et al discloses that the stiffness of the free layer is increased by using an antiferromagnet 14 to impart a stiffening magnetic field to the free layer.

Regarding claims 9 and 25, Tobise et al discloses that the stiffness of the free layer is increased by using both an antiferromagnet 14 and at least one permanent magnet stabilizing element 21 to impart a stiffening exchange magnetic field to the free layer (see figure 15).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the apparatus of Koren with the spin valve sensor as taught by Tobise et al.

The rationale is as follows: one of ordinary skill in the art would have been motivated to provide the apparatus of Koren with the spin valve sensor as taught by Tobise et al as doing this would allow to utilize a spin valve sensor in a tape reader using conventional art deposition techniques while operating over a broad signal frequency range.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 4-9, 17 and 20-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mao et al (U.S. Pat. 6,256,176) discloses a highly sensitive spin valve head; Coffey et al (U.S. Pat. 5,583,725) discloses a spin valve magnetoresistive sensor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angel A Castro whose telephone number is 703-308-8435. The examiner can normally be reached on Monday through Thursday, 8 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William R Korzuch can be reached on 703-305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Angel Castro C

Angel Castro, Ph.D.